

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A composition of matter, whose location is controllable through the use of a magnetic field, the composition of matter comprising:
 - an adsorbent material having an adsorbing capacity for adsorbing an adsorbate;
 - a magnetic material responsive to a magnetic field; and
 - a binder material for bonding the magnetic material to the adsorbent material.
2. The composition of matter of Claim 1 wherein the adsorbing material includes a carbon substance that desorbs the adsorbate when an electrical current is applied thereto and adsorbs the adsorbate when the electrical current is removed therefrom.
3. The composition of matter of Claim 1, further comprising a floating material designed to provide buoyancy of the composition of matter in a predetermined fluid.
4. The composition of matter of Claim 1, further comprising a sinkable material designed to prevent buoyancy of the composition of matter in a predetermined fluid.
5. The composition of matter of Claim 1, further comprising a suspending material designed to suspend of the composition of matter in a predetermined fluid.
6. The composition of matter of Claim 1, wherein the binder material is a copolyimide material.
7. The composition of matter of Claim 1, wherein the composition of matter is utilized in conjunction with a conduit, said conduit being configured to contain fluid flow and including an inlet and outlet port for passage of adsorbate, said conduit further providing a magnetic field for manipulating the location of the composition of matter.
8. The composition of matter of Claim 7, wherein the composition of matter is utilized in conjunction with a diluted adsorbate and hydrogen peroxide solution, and wherein the solution is passed through the conduit and the composition of matter is passed though the inlet port into the solution to adsorb and separate the adsorbate from the solution by removal of adsorbate-saturated composition of matter through the outlet port.

9. The composition of matter of Claim 7, wherein the composition of matter is further utilized in conjunction with a turbine.
10. The composition of matter of Claim 8, wherein the composition of matter is heated and recycled back into the solution in a repetitive cycle.
11. A composition of matter, whose location is controllable through the use of a magnetic field, the composition of matter comprising:
an adsorbent material having an adsorbing capacity for adsorbing an adsorbate;
and
a magnetic material responsive to a magnetic field and bonded to the adsorbent material.
12. The composition of matter of Claim 11, wherein the adsorbate is biological matter, and the adsorbent material is biologically targeted to attract the adsorbate.
13. The composition of matter of Claim 11, further comprising a magnetocaloric material.
14. A molecular separator apparatus, which uses an electric swing carbon fiber to control desorption of an adsorbate from the composition of matter in the apparatus, the apparatus comprising:
a first vessel within a second vessel, each vessel bonded electrically to the electric swing carbon fiber;
a concentric, non-electrically conductive seal connectably associated with each of the vessels; and
an electric power supply connected to each vessel.
15. The apparatus of Claim 14, wherein the adsorbate is an odorant and the vessels are exposed to air.
16. The apparatus of Claim 14, further comprising a carbon fiber monolith injected with odorants that are electrically desorbable to selectively reproduce smells.
17. The apparatus of Claim 14, wherein the adsorbate is an odorant, and said odorants are electrically desorbable to selectively reproduce smells via a computer network.
18. The apparatus of Claim 14, wherein the adsorbate is an odorant, and said odorants are electrically desorbable to selectively reproduce smells via television signals.

19. The apparatus of Claim 14, wherein the composition of matter includes a high kinetic adsorbent bonded to the electric swing carbon fiber.

20. The apparatus of Claim 14, wherein the electric swing carbon fiber is in thermally conductive contact with a refrigeration cold element to collect moisture from air and desorb said moisture electrically around a dew point of a given environment.

21. The apparatus of Claim 14, wherein the composition of matter includes carbon foam.

22. A molecular separator apparatus, which utilizes a magnetic field to control the location of a composition of matter, the apparatus comprising:

an adsorbent material having an adsorbing capacity for adsorbing an adsorbate;
a magnetic material responsive to a magnetic field; and
a binder material for bonding the magnetic material to the adsorbent material.

23. The apparatus of Claim 22, wherein the adsorbing material includes a catalyst substance that desorbs the adsorbate when an electrical current is applied thereto and adsorbs the adsorbate when the electrical current is removed therefrom.

24. The apparatus of Claim 22, further comprising a floating material designed to provide buoyancy of the composition of matter in a predetermined fluid.

25. The apparatus of Claim 22, further comprising a sinkable material designed to prevent buoyancy of the composition of matter in a predetermined fluid.

26. The apparatus of Claim 22, further comprising a suspending material designed to suspend of the composition of matter in a predetermined fluid.

27. The apparatus of Claim 22, wherein the binder material is a copolyimide material.

28. The apparatus of Claim 22, further comprising a conduit configured to contain fluid flow and including an inlet and outlet port for passage of adsorbate, said conduit further providing a magnetic field for manipulating the location of the composition of matter.

29. The apparatus of Claim 28, wherein a diluted adsorbate and hydrogen peroxide solution is passed through the conduit, and the composition of matter is passed through the inlet port into the solution to adsorb and separate the adsorbate from the solution by removal of adsorbate-saturated composition of matter through the outlet port.

30. The apparatus of Claim 28, wherein the conduit further includes a turbine.

31. The apparatus of Claim 29, wherein the composition of matter is heated and recycled back into the solution in a repetitive cycle.

32. A molecular separator apparatus, which utilizes a magnetic field to control the location of a composition of matter, the apparatus comprising:

a non-magnetic, attracting material having an attracting capacity for attracting an attractable material; and

a magnetic material responsive to a magnetic field and bonded to the non-magnetic, attracting material.

33. The apparatus of Claim 32, wherein the attractable material is a predetermined biological matter, and the attracting material is biologically targeted to attract the predetermined biological matter.

34. The apparatus of Claim 32, further comprising a magnetocaloric material.

35. The apparatus of Claim 32, further comprising a fuel cell operatively connected in fluid communication with the apparatus.

36. The apparatus of Claim 32, wherein the composition of matter is incorporated with carbon foam mold for casting aluminum foam net shapes.

37. The apparatus of Claim 32, wherein the composition of matter is incorporated in conjunction with a magnetically actuated sealless valve.